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Improving Transitions of Care in Primary Care by Standardizing Discharge Summary and Medication Reconciliation Practices

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IMPROVING TRANSITIONS OF CARE IN PRIMARY CARE BY STANDARDIZING DISCHARGE SUMMARY AND MEDICATION RECONCILIATION PRACTICES

by

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Abstract

Communication breakdown happens between transitions of care because healthcare disciplines function as silos. Medication and treatment plan changes are not always communicated to the next healthcare provider resulting in fractured care and preventable unnecessary cost. The purpose of this project was to create a standardized transition of care process from the acute care setting to the primary care setting in adult patients using evidence-based practice. The objectives of the project were the following: (1) to have a follow-up appointment within 14 days of discharge from an acute care setting, (2) to have a medication reconciliation performed and documented by the physician at the post-discharge follow-up visit, (3) to have a discharge summary verified by the physician at the post-discharge follow-up visit, and (4) to reduce 30-day hospital and emergency department readmissions by 25%. Planned interventions included staff education of transition of care process, acute care data collection, and patient follow-up. Evaluation plans included review of the electronic health record and hospital queries comparing pre- and post-intervention data. Results showed a 24% increase in post-discharge follow-up appointments within 14 days, an average of a 26% increase in transition of care communication, and a 7% decrease in emergency room readmissions. Hospital readmissions increased by 7%. Implications for the practice include standardizing the process for all transitions of care, streamlining access to transition of care data, and having one affordable and user-friendly central database available to primary care practices.

Keywords: transitions of care, medication reconciliation, discharge summary, hospital readmission

Improving Transitions of Care in Primary Care by Standardizing Discharge Summary and Medication Reconciliation Practices

Transitions of care from a hospital or emergency room to a patient's primary care provider (PCP) can create gaps in patient care because healthcare disciplines are operating as silos. Information regarding the patients' medications and plan of care is not accurately and consistently communicated from acute care settings back to primary care settings. It has been found that medication discrepancies causing the greatest harm occur during the transition from hospital or emergency room discharge to home (Feldman et al., 2012). When patients go to the emergency department or are hospitalized unexpectedly, the medications they are taking are often not communicated accurately to acute care staff. This miscommunication creates the potential for medical errors. To add insult to injury, there is no universal electronic system in place to capture this information and transmit it when patients transition from one healthcare setting to another. Health information exchanges, or HIEs, have been set up both nationwide and in Texas using federal funding for this purpose (Texas Health Services Authority, n.d.). However, the cost and user-friendliness of accessing this data remains questionable to local primary care practices. Some hospitals and primary care practices must then rely on facsimile to transmit this data, which has also proven unreliable. Some hospitals email the physician the transition of care data; however, this is not always consistent. With a multitude of hospitals sending transition of care data in a variety of ways, it is difficult for a primary care practice to capture this data with any sense of reliability. In 2008, in an effort to address the inconsistency of this problem, the National Committee for Quality Assurance (NCQA) launched the Patient-Centered Medical Home, or PCMH, Recognition Program (NCQA, n.d.b). Key concepts that a certified PCMH addresses are communication between healthcare providers during transitions of

care, medication reconciliation, and discharge summaries. Since then, over 12,000 primary practices have achieved PCMH recognition, which has resulted in improved patient care, reduced costs, happier staff, and happier patients (NCQA, n.d.b). Accountable Care Organizations (ACOs), the Centers for Medicare and Medicaid Services (CMS), and Healthcare Effectiveness Data and Information Set measures have also supported an effort to standard transition of care processes regarding medication reconciliation and communication of patient care through discharge summaries (CMS, 2016; NCQA, n.d.c). By exploring how to standardize transition of care processes and implement these processes into primary care practice, both the patient and the healthcare system can benefit.

Statement of the Problem

There is lack of a standardized method of communication of patient care during posthospital or post-emergency department care transitions. This creates potential for error (Hennen & Jorgenson, 2014). After a patient has been to the emergency department, hospitalized, or both, instructions on which medications they should continue, stop, or change is not always easily understood by the patient. In addition, discharge summaries or medication lists are not always received by the PCP prior to the patient's post-discharge follow-up appointment (Forster, Murff, Peterson, Gandhi, & Bates, 2003). At times, the PCP is not even aware a patient in their practice was seen in the acute care setting. Primary care practices are left with little to no communication regarding which medications were discontinued or changed in the patient's care or even the rationale for why these decisions were made. This has led to a fractured delivery of patient care, which has resulted in adverse events and hospital readmissions in less than 30 days of discharge. Each year 19.6% of Medicare patients are readmitted within 30 days of discharge from an acute care setting. The cost for these readmissions is $15 billion a year (Hennen &

Jorgenson, 2014). In addition, the annual cost of adverse drug events exceeded $177.4 billion in ambulatory care settings in the United States, and 70% of this cost was due to an adverse event that led to hospitalization (Bonnet-Zamponi et al., 2013). Evidence shows that in high-risk populations like the elderly (due to polypharmacy), 10% to 30% of hospitalizations are drug-related (Bonnet-Zamponi et al., 2013).

Implementing a standardized process of transition of care from an acute care setting, such as a hospital or an emergency department, to a patient's PCP through a complete and accurate handoff consisting of an updated medication reconciliation and discharge summary is needed.

Background Significance

During an unanticipated emergency department visit or hospitalization, accurately remembering every medication name, dosage, frequency, purpose, and prescribing doctor can be difficult for patients. These inaccuracies can follow a patient through their stay and during the discharge process. This can, in turn, lead to an adverse event, sometimes also referred to in the literature as an adverse drug event (ADE), if it is a result of a medication discrepancy or error. It has been found that 20% of patients experience an adverse event within 3 weeks of discharge from a hospital, and 1 in 3 heart failure patients are readmitted within 30 days of discharge (Hennen & Jorgenson, 2014). The Institute of Medicine (2007) stated that 1.5 million ADEs were estimated to cost $3.5 billion annually, all of which were preventable. To further complicate this transition of care, 3 out of 4 patients discharged from a hospital do not have a discharge summary available during the first posthospital discharge follow-up visit (Forster et al., 2003). Because of difficulty in bridging the communication gaps between acute and primary care, the impact on the healthcare system results in harm to patients, which can lead to readmissions and high financial cost. According to the Institute of Medicine's (1999) *To Err Is*

Human, 98,000 deaths a year are a result of medical errors. These statistics were gathered from a study done in New York hospitals in 1984. A more recent study revealed that these figures have now grown to 210,000 to 400,000 annually (James, 2013).

Organizational Assessment

This quality improvement project took place at two separate solo practitioner internal medicine clinics. Staff members included one internal medicine physician, one nurse practitioner student, three medical assistants, and one medical assistant intern. There were two receptionists, one clinical care coordinator, one billing clerk, and one office manager. All staff members were bilingual in both Spanish and English. In addition, there was a recently opened satellite clinic approximately 14 miles away. The physician and his staff spent their time seeing patients between the two locations and hoped to grow the satellite clinic into a similar volume clinic.

The following patient populations were the focus: (a) patients who had been recently discharged from a hospital and (b) patients who had been recently discharged from an emergency department. The protocol for patients seen for a posthospitalization or post-emergency department follow-up visit consisted of the medical assistant printing up the patient's medication list and asking the patient if they were still taking the listed medications. At times, patients could not remember which medications they were still taking, which medications were prescribed from their hospital or emergency department, and which medications were from their current PCP. Medications that the patient stated they were no longer taking were crossed out on the hard copy. If the corresponding hospital had faxed, emailed, or mailed a medication list and discharge summary, the patient's data were updated both on the paper chart and in the electronic health record (EHR). There was no consistency with the attainment of hospital medication lists or of discharge summaries. Sometimes patients would have these documents at their post-discharge

follow-up appointment. A preliminary chart review was conducted for a period of 10 weeks from November 05, 2017, to January 13, 2018. The chart review, as shown in Table 1, revealed the percentage of patients who were seen in the acute care setting and who also received the recommended follow-up appointment. The table also demonstrates the level of communication that occurred (preintervention) between the acute care setting and the primary care setting as well as the outcomes for these patients.

Table 1

Preintervention Statistics

Objective	Preintervention
Post-discharge follow-up < 14 days	10%
Medical record received/documented	30% / 30%
Discharge summary received/documented	33% / 30%
Hospital < 30-day readmissions	0%
Emergency department < 30-day readmissions	10%

Organizational Readiness for Change

This practice revealed its readiness for change in that at the start of this project, it had recently achieved recognition as a PCMH. To achieve this recognition, the practice focused on implementing various measures for quality improvement. The three key concepts of this quality improvement project focused on medication reconciliation, discharge summaries, and transition of care from an acute care setting to the primary care setting. The preintervention processes in place were not standardized. The solo practioner expressed an interest in implementing new processes that would standardize and improve upon existing transitions of care. The practice has

been a member of an Accountable Care Organization (ACO) since 2015 and was recognized as a top performing ACO in the United States in 2017. Since then, this practice continued its journey to become a certified PCMH. The solo practitioner of the practice as well as all its staff members expressed a willingness to implement this quality improvement project in order to maintain status as a PCMH and to continue to meet all ACO and Healthcare Effectiveness Data and Information Set measures.

Project Identification

Purpose

The purpose of this project was to create a standardized transition of care process from acute care settings to the primary care setting in adult patients using evidence-based practice with the focus of improving communication, decreasing hospital and emergency department readmissions, and ultimately, improving patient safety during these transitions of care.

Objectives

The objectives for this quality improvement project were the following:

- Prior to the first day of implementation, 100% of the staff would be educated regarding the standardized transition of care process implemented by this project.
- Within 10 weeks of implementation, 90% of patients seen in an acute care setting would have a post-discharge follow-up appointment within 14 days of being discharged.
- Within 10 weeks of implementation, 90% of post-discharge follow-up patients would have a medication reconciliation received and documented by the practice.
- Within 10 weeks of implementation, 90% of post-discharge follow-up patients would have discharge summaries received and documented by the practice.

- Within 10 weeks of implementation, all post-discharge follow-up patients would receive an updated reconciled medication list from the practice.
- Within 10 weeks of implementation, there would be a 25% reduction in patients readmitted to the emergency room within 30 days of discharge.
- Within 10 weeks of implementation, there would be a 25% reduction in patients readmitted to the hospital within 30 days of discharge.

Anticipated Outcomes

With these objectives met, all patients would have a safe and timely transition of care from an acute care setting, such as a hospital or emergency department, to the primary care setting. Reconciled medication lists and discharge summaries from acute care settings would be transmitted to this practice prior to the post-discharge follow-up appointment, which would occur no less than 14 days after discharge. This would improve communication during transitions of care, reduce the potential for ADEs, and, in turn, reduce the number of costly and preventable readmissions to hospitals and emergency departments.

Summary and Strength of the Evidence

The evidence to support better outcomes during transitions of care is a result of several processes. The use of medication reconciliation and timely communication in the form of discharge summaries during transitions of care from an acute care setting to the primary care setting is well documented by leading organizations in the healthcare industry. The Joint Commission launched its National Patient Safety Goals in 2006 and medication reconciliation was listed as one of these goals (The Joint Commission on Accreditation of Healthcare Organizations, 2006). CMS has introduced six concepts for private practices to become certified as a PCMH, two of which include medication reconciliation and effective transitions of care

(NCQA, n.d.b). The CMS has also created Accountable Care Organizations to improve patient care processes to save money and reduce waste (CMS, n.d.). In 2011, the Institute for Healthcare Improvement (2011) introduced a how-to guide on avoiding medication errors through implementation of accurate medication reconciliation. Lastly, the Institute of Medicine (2007) released a report on preventing medication errors, highlighting the astronomical costs of not improving these processes. All agreed that processes for medication reconciliation and timely communication between hospitals and primary care practices need to be consistently in place to achieve better patient outcomes.

The dichotomy that exists between medication reconciliation and transitions of care is such that all the evidence supports the idea that this *should* be done, but little evidence exists to support exactly *how* this can be done in private practice. For example, leading trusted healthcare organizations set the tone for these requirements in their agendas. According to CMS (2016), regarding certification criteria for Clinical Information Reconciliation, a user should "electronically reconcile the data . . . medication, problem, and medication allergy" (p. 3). Criteria for practices to qualify as Patient-Centered Medical Homes state processes must be in place for coordination of care, care transitions, and medication reconciliation for a minimum of 80% of their patients (Agency for Healthcare Research and Quality, 2017). In addition, NCQA added Transitions of Care and Follow-up After Emergency Department Visit for People with High-Risk Multiple Chronic Conditions as first year measures in 2018 (NCQA, n.d.a). And lastly, the Agency for Healthcare Research and Quality (2012) provided a "toolkit" for medication reconciliation, but it lacks specific methods a private practice can use to gather this data electronically in a cost-effective and reliable manner. The recurrent theme in the literature is the lack of a universal standardized process to transmit medication and patient information

throughout the patient care continuum (Kennelty, Witry, Gehring, Dattalo, & Rogus-Pulia, 2016). Hospitals, pharmacies, and primary care practices have the ability to connect through technology. However, due to patient privacy and the Health Information Portability and Accountability Act, EHRs do not "talk" to one another. In 2010, the U.S. government gave $548 million to 56 states for the purpose of setting up HIEs (Texas Health Services Authority, n.d.). In January 2011, another $16.3 million was given. The state of Texas itself received a total of $28.8 million of these monies (Texas Health Services Authority, n.d.). The purpose of these HIEs was to bridge the communication gap during transitions of care by housing patient medical records and providing electronic access to healthcare providers (Becker's Health IT & CIO Report, 2015). In San Antonio, two HIEs are available: Healthcare Access San Antonio (HASA) and Integrated Care Collaboration (ICC). Although this has proven successful in some states, not all primary care practices in Texas can reap the benefits. Some limitations include cost. According to the practice involved in this project, a price tag of $5,000 per year for access to HASA was quoted. For many practices in Texas, this is not a feasible option. Another limitation is the number of counties included in the HASA database. If a patient were to travel outside these counties and be seen or admitted to a hospital, access to records would not be available through the HASA database. Primary care practices are left chasing patient records, namely medication lists and discharge summaries, from various hospitals and emergency departments. This process is both inefficient and time-consuming.

Medication Reconciliation and Education

Maintaining updated medication lists across transitions of care for patients is challenging. The complexity of maintaining this vital piece of information for patients increases when multiple healthcare providers in the form of specialists are involved or if the patient is seen in an

emergency department or hospital. Various methods have been implemented to achieve this, and one method is using collaborative teams. One pilot study done at Johns Hopkins found that medication discrepancies decreased when physicians were relieved of the task of reconciling medications and a nurse-pharmacist team undertook this instead (Feldman et al., 2012). While this study produced positive outcomes, it only followed patients through the hospital setting (from admission to discharge), and not through the transition of care to the patients' PCP. A systematic review and meta-analysis of pharmacist-led medication reconciliation programs during hospital transitions found an overall reduction of 66% in patients with medication discrepancies (Mekonnen, McLachlan, & Brien, 2016). Another approach that produced significant results came from a pharmacist-led team who visited with patients just prior to discharge from the hospital and then visited each patient again in the home, reconciled medications, provided education to the patient, and faxed the reconciled medication list to the patient's PCP and local community pharmacy (Pherson et al., 2014). A median of two medication discrepancies were found per patient. In addition, a median of two recommendations for improving medications per patient were made to the patients' PCP by the pharmacist (Pherson et al., 2014).

Incorporating informatics into medication reconciliation was also found to be useful in a randomized controlled trial performed at two large teaching hospitals in Boston. Using EHRs for medication reconciliation resulted in a decrease in potential adverse drug events (PADEs) of 1.05 per patient compared to the control group who had 1.44 PADEs per patient (Schnipper et al., 2009). Okafor et al. (2017) demonstrated how standardizing the process of medication reconciliation during checkout could also reduce the chance for medical errors or relevant missed clinical items (MCIs). They found that the control group had 94 MCIs per 164 cases, while the

standardized process group only had 36 MCIs per 157 cases (Okafor et al., 2017). Having a common, updated medication list across disciplines and the patient supplied with this list was found to be a strength related to medication safety (Modig, Lenander, Viberg & Midlov, 2016). In addition, identifying high-risk patients with polypharmacy is also important. By providing this group of patients with extra education and quick easy access to a healthcare provider when they have questions would also help to reduce ADEs (Modig et al., 2016).

Educating the patient regarding their medications is the second component of successful medication reconciliation. In a study conducted in three large teaching hospitals in Bogota, Columbia, a pharmacist-led medication reconciliation was performed on patient admissions to the emergency department. The purpose was to see if having an accurate updated medication regime available to the emergency department doctor would reduce the rate of PADEs (Becerra-Camargo, Martinez-Martinez, & Garcia-Jimenez, 2015). Of the total PADEs recorded, 65% were from the control group compared to 35% from the intervention group (Becerra-Camargo et al., 2015). This supports the idea that if patients had an accurate up-to-date medication list when they are admitted to an emergency department, their risk for PADEs is significantly reduced. In speaking of the challenges of maintaining an accurate medication list in primary care, an observational study of medication reconciliation using a pharmacist-led team in primary care found a 14.5% reduction in medication discrepancies as well as a 7.3% reduction in frequency of discrepancies (Stewart & Lynch, 2014). Therefore, when patients have medication reconciliations done after a transition of care, they are less likely to have an adverse event occur.

Timely Discharge Summaries

While it is common practice for a physician discharging a patient to write a discharge summary or discharge report, the quality of the information in these reports merits examination.

Deficits were found in both education of and quality of a discharge handoff in some emergency residency programs (Gallahue et al., 2015). A teaching hospital in Germany found that by attaching a medication report as part of the discharge letter in ischemic stroke patients, they were able to improve communication between hospital and primary care physicians. As a result, adherence rates to medication regimen increased significantly in the intervention group from 83.3% to 90% (Hohmann, Neumann-Haefelin, Klotz, Freidank, & Radziwill, 2014). One reason cited in the study for this increase in adherence was the clarification of medication by the hospital physician in the patient's discharge letter. When a medication dose was changed or a medication was removed or added, the explanation for that decision-making was added for the patient to review and for future healthcare providers to have a record. Adding an explanation, no doubt, helped bridge any communication gaps that may have developed during the transition of care. The Institute for Healthcare Improvement (n.d.) also supports improved communications during transitions of care as a way of reducing hospital readmissions. An example of how timely discharge summaries can help prevent harm can be seen in the amount and type of adverse events that can occur after discharge. One tertiary care academic hospital found that 19% of patients had an adverse event occur after discharge; of these adverse events, 48% were preventable (Forster et al., 2003). If patients had timely discharge summaries of their care sent to their PCPs, it would give the opportunity for review of the patient's care and treatment and potentially avert these issues.

Preventing 30-Day Readmissions

The idea of a patient seeing their PCP after an emergency department visit or a hospitalization seems only logical. However, as with many other processes in patient care, there is no standardized method of assuring this happens, particularly in a timely manner. Patients may

not know they need to see their PCP after an acute care transition. A study in North Carolina evaluating the efficacy of timely outpatient follow-up after a hospital discharge on readmission rates examined this subject. It was found that 7-day follow-up appointments were associated with a reduction of readmission risk in patients who had multiple chronic comorbidities (Jackson, Shahsahebi, Wedlake, & DuBard, 2015). A 14-day follow-up appointment showed a 1.5% readmission rate in low-risk patients and a 19.1% in high-risk patients (Jackson et al., 2015). Multiple components, however, contribute to a reduction in hospital readmissions. A systematic review of three randomized controlled trials and seven observational cohort studies showed education and follow-up appointments as also significantly reducing hospital readmissions (Jones et al., 2016). In a randomized, parallel group, open-label trial conducted in Paris, drug review, education, and improved communication during the transition of care resulted in 39.7% fewer readmissions related to ADEs (Bonnet-Zamponi et al., 2013).

In a program entitled Preventing Avoidable Readmissions Together, or PART, multiple hospitals, rehabilitation facilities, and skilled nursing facilities found that implementing improved quality discharge summaries as well as timely follow-up appointments produced greater than a 10% improvement in overall hospital readmission rates (Kennelty et al., 2016). Another group of hospitals, rehabilitation facilities, and skilled nursing facilities also found success in the PART program. In this group, patients who experienced myocardial infarction, heart failure, and chronic obstructive pulmonary disease experienced a reduction in readmissions of 25.2%, 22.5%, and 8.4%, respectively (Axon et al., 2016). The key components to successfully reducing hospital readmissions, they found, was a multipronged approach. Two systematic reviews of meta-analysis done revealed similar commonalities: (1) having medication reconciliation and reviewing that with the patient, (2) scheduling an appointment with the PCP

prior to being discharged from the acute care setting, (3) having that follow-up appointment in a timely manner, and (4) having the discharging physician and the PCP communicate prior to or at the time of the follow-up appointment. These multiple implementations can and have helped to prevent hospital readmissions (Braet, Weltens, & Sermeus, 2016; Leppin et al., 2014).

Theoretical Framework

Rogers' (2003) theory of diffusion of innovations was demonstrated in this quality improvement project. To guide the project, the Plan, Do, Study, Act, or PDSA, cycle was implemented on an ongoing basis (Donnelly & Kirk, 2015). For this project, each objective had its own diffusion with which it was accepted, processed, and executed by staff. Rogers' theory identifies five types of adopters of new innovations: (1) the innovator, (2) the early adopters, (3) the early majority, (4) the late majority, and (5) the laggards (Rogers, 2003). Each adopter presents initially as one of these five identities. Each then moves through five stages of acceptance of the innovation. The five stages are (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. Rogers' theory suggests that if the group dynamic perceives the new ideas to create an advantage and benefit compared to what was in place before, they will more than likely move through the five stages of acceptance more quickly (Rogers, 2003). It was noted that those who held leadership roles in the practice tended to present as early adopters (i.e., the physician, the care coordinator, and the office manager) and moved through the five stages relatively quickly. However, the remaining staff vacillated between late majority and laggards. They also moved through the five stages reaching knowledge, persuasion, and decision quickly, but hesitated when it came to implementation and confirmation. Various factors contributed to this dynamic, which were not immediately apparent. Discussion of these factors will follow. The PDSA model was used repeatedly to guide and tailor the implementation

aspects of this project. For example, all staff members were to be cross-trained to perform the biweekly hospital database searches for patients that had either been hospitalized or seen in an emergency department. A printed schedule was set up to be divided among the seven staff members. This later had to be revised due to some staff members not having access to hospital records for specific hospitals. It was also difficult to have the medical assistants perform these hospital database searches due to time constraints given their other job duties. Using the PDSA cycle allowed for modifications to be made periodically to better facilitate the implementation of the interventions. Further PDSA cycle revisions will be presented in the Discussion.

Methods

Project Interventions

The plan for this project consisted of three phases. The first phase involved educating the stakeholders and implementing the transitions of care improvement interventions. The second phase included collecting historical data that were taken from existing patients in this practice. The final phase included conducting chart reviews after implementing the interventions as well as analyzing the pre- and post-intervention data.

The first phase consisted of educating the staff regarding the purpose, objectives, implementation, and goals of the project. This education took place during a lunch hour designated by the physician. The Doctor of Nurse Practice (DNP) student was present at the clinic during the first few weeks of implementation and periodically throughout the project to assure the process ran smoothly and to be available to staff if any questions arose during the process.

Phase two consisted of data collection and chart review of the patients in this practice who had experienced a transition of care from an acute care setting to the primary care setting.

The data collected consisted of three components: (1) the number of patients who had a post-discharge follow-up appointment within 14 days of discharge from an acute care setting, (2) the number of patients who experienced a transition of care who had a medication reconciliation and discharge summary from the acute care setting present at the time of their post-discharge follow-up appointment, and (3) the number of patients readmitted to a hospital or an emergency department within 30 days of discharge from the acute care setting.

The third phase included data collection by retrospective electronic chart review of all transitions of care that occurred with patients postproject implementation to assess efficacy of the interventions through data analysis.

Follow-Up Appointment

Patients who are discharged from an acute care setting have been shown to have lower rates of hospital readmission if they complete a transition of care to their PCP within approximately seven to fourteen days after being discharged (Jackson et al., 2015). This outcome was measured by EHR chart review and the Patient Hospital Database Search Log. Dates of hospital or emergency department discharges were compared with the follow-up PCP appointments. A review of the literature shows that having a follow-up appointment soon after being discharged is associated with reduced hospital readmissions (Axon et al., 2016; Braet et al., 2016; Field, Ogarek, Garber, Reed, & Gurwitz, 2015; Kangovi et al., 2014), thereby providing reliability and validity.

Patient Hospital Database Search Log

Not all patients make a post-discharge follow-up appointment within the recommended time frame for best outcomes. For these patients, all staff (excluding the physician) were given a strategy, based on evidence-based practice, to capture these patients and prevent them from

falling through the cracks. The plan was for the practice's care coordinator to oversee this process of checking local hospitals on a biweekly basis for patients from the practice who had been seen in any acute care setting. The patients were then cross-checked in the practice's EHR to verify if a post-discharge follow-up appointment had been made. If not, the patient was contacted and an appointment made for them. This was measured by a review of the Patient Hospital Database Search Log (see Appendix B). A schedule was created for staff members to share this responsibility on Tuesdays and Fridays. The schedule was typed up and a copy was given to all staff members along with a thorough explanation of this process.

Discharge Summary

Having a discharge summary in hand during a patient's post-discharge follow-up visit is key for a successful outcome of transition of care (Bonnet-Zamponi et al., 2013; Braet et al., 2016; Leppin et al., 2014). Handoff communication between one healthcare provider and the next one is key to providing continuity of care, preventing hospital readmissions, and improving patient outcomes (Axon et al., 2016; Bonnet-Zamponi et al., 2013; Leppin et al., 2014). Patients often do not remember all the instructions given at discharge from an acute care facility. When they transition from discharge to their PCP, it is an opportunity for their physician to review the treatment given to them as well as integrate these instructions into their current treatment plan. Without the discharge summary, it is impossible to assess what was done for the patient during their acute care visit or stay. Not having this vital piece of treatment information can lead to gaps in care and possibly adverse events or adverse drug events (Braet et al., 2016; Schnipper et al., 2009). This outcome can be measured by an EHR and hard chart review. Dates of when the hard copy was faxed or received by the office can be compared with the date of the post-discharge follow-up visit. If the discharge summary was accessed electronically, date of when the record

was uploaded can be compared to the date of the post-discharge follow-up appointment. In this practice, staff had mentioned that patients sometimes bring the discharge summary along with other hospital records with them to the post-discharge follow-up appointment. In these cases, dates for the discharge summary and medication list from the acute care setting were recorded as the same date as the post-discharge follow-up appointment. This was also measured by EHR review in that the physician documented his review of the discharge summary and medication list from the acute care setting when creating the patient's new treatment plan.

Discharge Medication List

The evaluation plan for the discharge medication list was similar to the discharge summary. It, too, is a vital piece of information necessary for a successful transition of care (Axon et al., 2016; Mekonnen et al., 2016; Schnipper et al., 2009). Ideally, like the discharge summary, the discharge medication reconciliation done by the discharging physician would be in the hands of the PCP prior to or during the post-discharge follow-up visit. Many readmissions happen due to polypharmacy and miscommunication with medications during transitions of care (Stewart & Lynch, 2014). This outcome was measured in the same manner in which the discharge summary was measured, by EHR and hard chart review. Evidence-based practice confirms that having a medication list from the acute care visit is vital in preventing adverse drug events (Becerra-Camargo et al., 2015; Mekonnen et al., 2016) and, therefore, reliable and valid as an outcome measure.

Standardized Medication List Form and Education Given

A new standardized medication list form was designed for this practice. The form allowed the patient's medications to be listed with dosages, frequency, prescribing physician, and reason prescribed. It was bilingual in both English and Spanish. The form was designed in

collaboration with the DNP student and the physician (see Appendix C). Each patient presenting for a post-discharge follow-up appointment had a medication reconciliation performed, verified by the physician, entered into the EHR, and a hard copy given with specific instructions to carry this on their person at all times. At the end of the project, the physician expressed a desire to implement this process to all patients in the practice at each visit.

Hospital Readmissions

The evaluation plan to track patients readmitted within 30 days of discharge from an acute care setting consisted of a hard chart and electronic chart review of all patients who had a record of hospitalization or acute care visit during the time of original data collection. If no readmissions within 30 days of discharge were noted in the patient's EHR or hard chart, the care coordinator's Patient Hospital Database Search Log was then reviewed.

Outcome indicators for this project were 30-day emergency department readmission rates as well as 30-day hospital readmission rates.

Planned Changes and Outcomes

The planned changes for this project were multifaceted. First, on a biweekly basis, under the oversight of the care coordinator, the staff would search local hospital databases for any patients admitted to the emergency department or hospital and would obtain a discharge summary and medication list to be uploaded into the practice's EHR. The patient would then be contacted to schedule a post-discharge appointment to occur within 14 days of discharge. Second, the staff would place the hospital medication list, the discharge summary, and the medication list from the practice's EHR on the patient's chart for the doctor to perform, verify, and document a reconciliation. Once the physician verified the medications, the staff would update the EHR and give the patient an updated copy of their medication list. These process changes would improve

communication during transitions of care between an acute care setting, such as a hospital or emergency department, and the primary care setting. The improved communication would be due to the practice's reception of a hospital medication list as well as a discharge summary. A follow-up appointment for the patient would be facilitated by the practice in 14 days or less for optimal outcomes (Jackson et al., 2015). Together, these two interventions would result in decreased hospital readmissions within 30 days and reduced adverse events.

Population

The population seen in this internal medicine solo practice consisted of patients age 10 and up. According to an extrapolation of 2016 data obtained from the EHR program used in the practice, LytechMD, the total number of patients seen in 2016 was 1,828. Of these patients, 67% were Hispanic, 20% were Caucasian, 8% were Black, 3% were Asian, and 2% were of other race (see Figure 1). With respect to age, 54% were ages 56 to 76, 14% were 40 to 55, 10% were 30 to 39, and 15% were 13 to 29 (see Figure 2). Male patients made up 61% of the practice, while female patients made up 39%. The top three diagnoses were hypertension, diabetes mellitus type II, and chronic kidney disease. Demographics reflecting marital status, education level, income level, or religious preference were not available for extrapolation from the EHR program in place. The practice saw approximately 10 to 15 patients per half day and approximately 70 to 100 patients per week. The main practice and satellite locations were located in the south San Antonio area and were part of Bexar County.

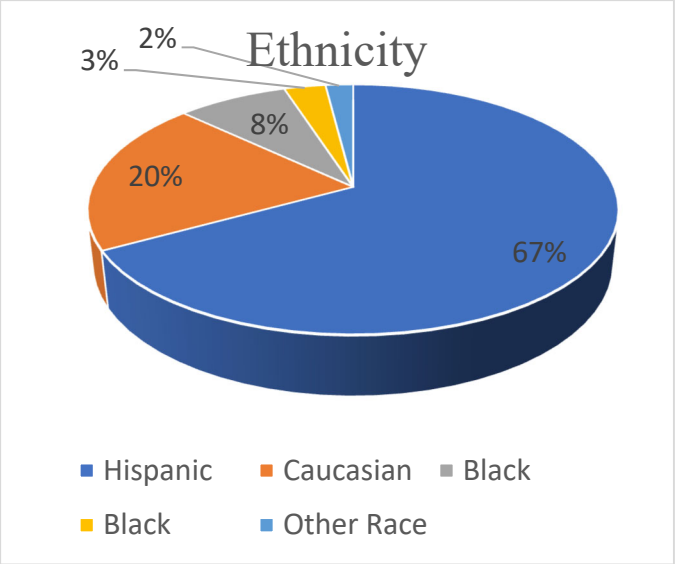

Figure 1. Ethnicity of patient population.

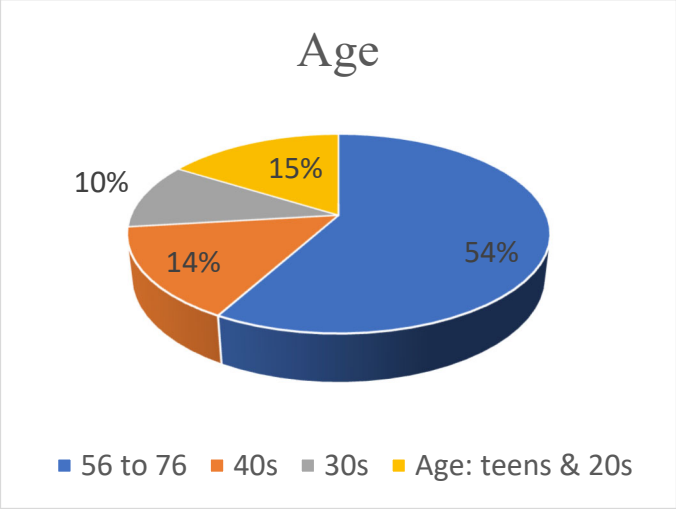

Figure 2. Age of patient population.

Organizational Barriers and Facilitators

Barriers. There were a multitude of barriers to the project that presented both initially and during implementation. Staff buy-in due to lack of time was the first barrier. Despite a schedule being created that divided up the hospital database search days, the majority of staff did not have time to stop patient care and follow up on this task. Ultimately, this task was left to the

care coordinator, the office manager, or the billing clerk. The second barrier was that each hospital had a different way of sending transition of care (TOC) documents or a different method of accessing them (either via fax, email, or an individual login). The third barrier was that some hospitals would send discharge summaries and medication reconciliations inconsistently. The fourth barrier was that if hospitals sent notifications of patients seen at their facility or sent TOC documents, the staff did not always follow up and make the post-discharge follow-up appointment for the patient within the recommended 14 days. The fifth barrier was that some hospitals would send TOC documents to the physician's email. This access was only granted to the care coordinator and not to other staff. The sixth barrier was the unavailability of patient data from all local hospitals. Data collection was only possible from Metropolitan Methodist Hospital and the Baptist Healthcare System. Christus Santa Rosa was in the process of developing access for the staff members to pull data. However, this access was not granted by the end date of the project. Of the patient data collected from Metropolitan Methodist and the Baptist Healthcare System, the queries were found to have missing patients, which were later discovered during data collection of the practice's EHR. The seventh barrier was the location of the patient data collected. When the discharge summaries and medication lists from a hospital were retrieved by staff, there was no consistent file name used to store the data. At times, it was placed electronically under Progress Notes, Hospitalization Follow-Up, and other times under Consultations, Discharge Summaries, and Other. The eighth and final barrier was, again, lack of time on the staff's part. Due to such a limited amount of time per patient, the staff did not have time to write out an updated list of the patient's medications that had been reconciled by the doctor. Completing an updated medication list for every patient who had experienced a recent transition of care, entering it into the EHR, and providing education to patients in an already

busy practice was impossible. On multiple occasions the DNP student stepped in to complete this process. However, patients did not want to stay after their appointment and wait for this list to be written up because it was not possible to print this from the EHR.

Facilitators. One facilitator of this project was the on-site DNP student. The DNP student held training sessions for staff to educate them on proper medication reconciliation and the use of the new standardized medication list form. The second facilitator was the physician's active membership in an Accountable Care Organization (ACO) as well as certification as a Patient-Centered Medical Home (PCMH). The commitment to improving quality of patient care was woven through the fabric of the practice. The third facilitator was an information technology (IT) hospital contact person for Metropolitan Methodist Hospital who was able to produce a query for patient data collection for the pre- and post-intervention dates requested.

Ethical Considerations

Ethical considerations during implementation included maintaining the Health Information Portability and Accountability Act privacy laws with patient information during data collection. A proposal for this project was submitted to the University of the Incarnate Word Institutional Review Board. Approval was granted and the project was recognized as a quality improvement project. A letter of support was obtained from the solo practitioner of the practice.

Results

Pre-intervention data was collected retrospectively for a period of 10 weeks from November 5, 2017, through January 13, 2018. Post-intervention data was also collected retrospectively from January 17, 2018, through March 27, 2018. Overall, results were positive and statistically significant for five of the six original objectives (see Figure 3.) One objective

appeared to be an outlier with unexplained and unpredicted results. Unintended consequences did present themselves through the course of this 10-week project, both positive and negative.

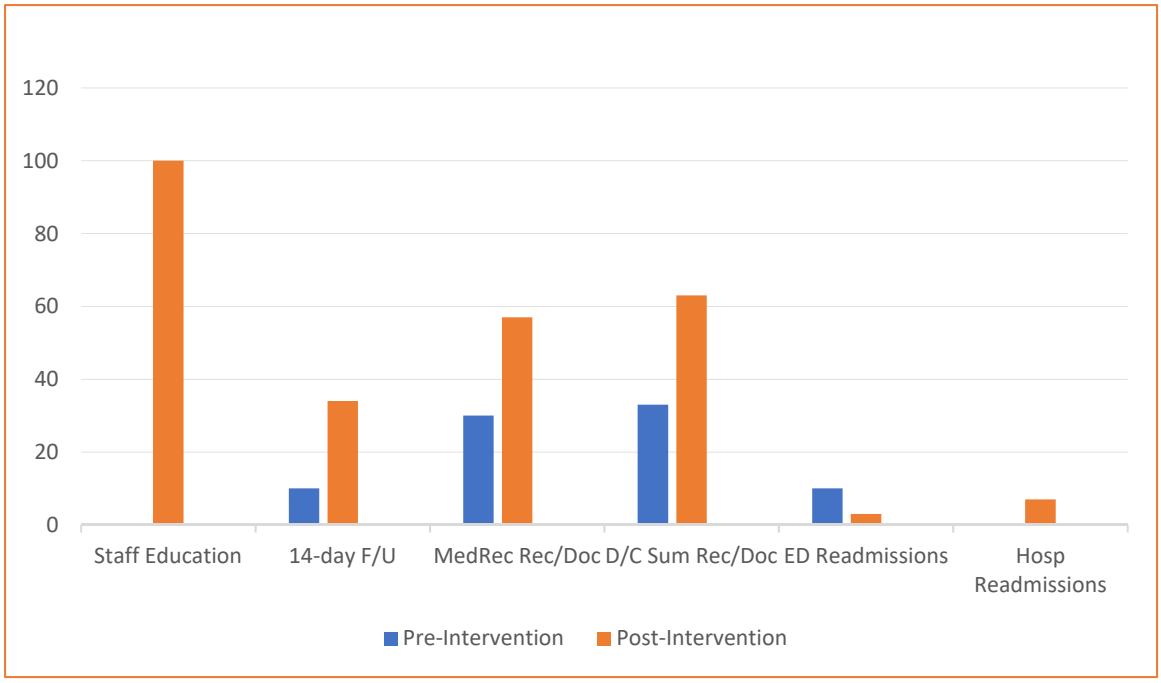

Figure 3. Comparison of pre- and post-intervention outcomes.

The first objective was to educate 100% of the staff, prior to the first day of implementation, regarding the standardized transition of care process put into effect by this project. This objective was met with a result of 100%.

The second objective was that within 10 weeks of implementation, 90% of patients seen in an acute care setting would have a post-discharge follow-up appointment within 14 days of being discharged. Preintervention data collected revealed that only 10% of patients received a post-discharge follow-up appointment within 14 days of discharge from an acute care setting. Post-intervention data showed an increase from 10% to 34% in this objective. The goal of 90% for this objective was not met.

The third objective was that within 10 weeks of implementation, 90% of post-discharge follow-up patients would have a medication reconciliation received and documented by the

practice. Preintervention data revealed that this practice received medication reconciliations 30% of the time and documented them 30% of the time (performed by the physician). Post-intervention data revealed an increase in medication reconciliations being received, 57% of the time, and documented, 53% of the time (performed by the physician). While this did not meet the original objective of 90% for both received and documented, there was a 27% increase of medication reconciliations received by the practice along with a 23% increase in a medication reconciliation being documented (performed by the physician). This objective was difficult to track due to its two-part nature: (1) the medication reconciliation done at the hospital had to be received by the practice prior to the patient's post-discharge follow-up appointment; and (2) if received, the physician had to perform his own medication reconciliation and document this in the EHR. The discrepancy between received and documented lies within the fact that, at times, these records were received by the practice. However, the patient may not have been contacted for a post-discharge follow-up appointment within the recommended 14 days. The 90% goal for this objective was not met.

The fourth objective was that within 10 weeks of implementation, 90% of post-discharge follow-up patients would have discharge summaries received and documented by the practice. Preintervention data for this objective showed that 33% of discharge summaries were received by the practice; however, only 30% were documented by the physician. While post-intervention data did not meet the 90% goal, there was an increase of 30% of discharge summaries received by the practice for a total of 63%. In addition, there was an increase of 25% of discharge summaries documented by the practice for a total of 55%. The 90% goal for this objective was not met.

The fifth objective was that within 10 weeks of implementation, all post-discharge follow-up patients would receive an updated reconciled medication list from the practice. Preintervention data for patients who received a reconciled updated medication list was 0%. Post-intervention data showed an increase of only 0.07%. The goal of 90% was not met. The original intervention plan was for the medical assistant to handwrite a finalized medication list once the physician reconciled the patient's medications. The medical assistant was then to give the finalized handwritten list to the physician for final review and to sign off. This happened with one patient, and it was found immediately that the medical assistant did not have time to handwrite this list and then wait for the physician—who was usually in a room with another patient—to sign off. In an attempt to assist, the DNP student intervened and began writing up the finalized medication list on two occasions. While this saved time for the medical assistant, patients did not want to wait after their appointments for this to be done. The process of writing up each medication, dosage, reason for taking it, prescribing physician, and waiting for the physician to sign off proved to be too long of a wait for patients. The PDSA cycle had to be reassessed at this point and a new intervention was added. Instead of writing up a medication list at the end of the patient's visit and waiting for the physician to sign off, patients were handed detailed instructions for logging into their patient portal. This was done on at least two witnessed occasions by the care coordinator. The patient portal provides a complete updated listed of medications and lab results, and it allows patients to send messages to staff and book appointments. Patients could then access their portal and print a copy of their most current medication list to keep with them at all times. Staff was instructed to give each patient a copy of the patient portal instructions. This modified intervention was implemented approximately three weeks into the project. Because this was a modified intervention, it was not possible to allocate

time to contact and confirm how many patients actually received the patient portal instructions and how many were successful with logging in and printing a current medication list. However, each patient was encouraged to call the office if they had any problems accessing their medication list in the patient portal.

The sixth objective was that within 10 weeks of implementation, there would be a 25% reduction in patients readmitted to the emergency room within 30 days of discharge. Preintervention data showed that 10% of patients seen in the emergency room were readmitted within 30 days of discharge. Post-intervention data showed a decrease of emergency room readmissions by 7% (a total of 3% post-intervention). The goal of a 25% reduction was not met.

The seventh objective was that within 10 weeks of implementation, there would be a 25% reduction in patients readmitted to the hospital within 30 days of discharge. Preintervention data showed 0% of patients were readmitted to the hospital within 30 days of discharge. Post-intervention data showed 7% of patients were readmitted to a hospital within 30 days of discharge. The 25% goal in reduction was not met. This was a significant negative result. There are multiple reasons why this may have occurred, which will be explained in the Discussion.

Discussion

While only five of the six objective goals were met, overall, this project was successful in the sense that it succeeded in improving the quality of care given. It also succeeded in highlighting the multitude of methods used to attempt to obtain patients' medical records. The physician of the practice was able to see that some patients who were discharged from a hospital or emergency room were not being contacted for a post-discharge follow-up appointment. He was also able to see that even though medication lists and discharge summaries were being sent or obtained by the practice, some of these patients were falling through the cracks due to lack of

follow-up by staff members. Perhaps this could have been because of the various places in the EHR where these documents were stored (i.e., Consults tab, Progress Notes tab, Discharge Summary tab). In an effort to fix this issue, the physician created a Transition of Care form specific to his office. This was the biggest change that came from this project, and it helped significantly to standardize the way patient records were tracked. The form would be available to all staff members at their desk. If any staff member came across any notifications from hospitals, patients, or insurance companies regarding a patient's discharge from an acute care setting, they would immediately grab this sheet and complete the information requested: the patient's name, date of birth, facility, date of admission or discharge, discharge diagnosis, and a multitude of other information, including an area to write down a post-discharge follow-up appointment date and time. This sheet would then serve as a reminder to contact the patient, make the post-discharge follow-up appointment, and track down the patient's medication list and discharge summary from the facility where they were seen. Once completed, the form would then be placed in the patient's hard chart for future reference. This form created a sense of accountability for staff members to follow up on all patients discharged from acute care settings. The project had another overall success in that implementation of this process allowed them to continue to meet criteria and measures for ACO and PCMH compliancy.

The difficulties in implementing the interventions were numerous. To begin with, staff training occurred in a setting that may have been overwhelming for them. The training was to occur over an extended lunch hour the physician and his care coordinator organized for a pharmaceutical representative who was coming to speak to the staff about a medication. The care coordinator and physician felt this would be a good way to get several presentations done at once. The pharmaceutical representative spoke for approximately 20 minutes. The next

presentation was given by another DNP student who was also conducting a DNP quality improvement project at this same practice. Her project presentation lasted approximately 30 minutes. Because her project interventions involved screening each patient in the practice for alcohol abuse, the staff appeared slightly overwhelmed. Staff was given reassurance regarding implementation of the projects. The DNP student for this quality improvement project followed with the final presentation. Due to this quality improvement project only requiring follow-up on patients who had been seen in an acute care setting, staff members appeared to accept and be open to learning about this project and its interventions.

A second difficulty was regarding the first objective of post-discharge follow-up visits occurring within 14 days. This task was ultimately implemented by the care coordinator. Originally, the physician of the practice requested that all staff be educated and trained to perform this task. A schedule was then created by the DNP student so that all staff would take turns contacting patients who needed a post-discharge follow-up appointment. It was noted that the care coordinator took the lead in this objective, with the remaining staff having little to no participation. One-on-one discussions were had with staff periodically, and the DNP student was informed that the care coordinator preferred to have full responsibility over this aspect of patient follow-up. The fact that this core objective was ultimately left to one person may have contributed the results of only 34% of patients receiving a post-discharge follow-up appointment within 14 days. Another contributing factor was the cash-paying status of some patients. Patients who did not have health insurance and paid cash at each visit found it difficult financially to come in for a post-discharge follow-up appointment after they had just been hospitalized or seen in the emergency department, especially if they were feeling better and their condition was resolving.

A third difficulty noted throughout the project was the inability to implement the objective of providing patients with an updated reconciled medication list. Initially, this was launched with the idea that the medical assistants would handwrite this list at the end of the visit after the physician had reconciled all medications. Due to lack of time on the medical assistants' part, this morphed into patients being given detailed instructions for how to access their patient portal from home. It was postulated that patients could then access and print their most current medication list to carry with them at all times in case of an emergency. During the time period the DNP student was present in this office, these instructions were given to patients who presented for a post-discharge follow-up appointment. However, during subsequent observation in later weeks, this was not often the case. When the care coordinator was asked about this, the response given was that giving the patients instructions to access their patient portal to print a current medication list was not part of the measures or criteria necessary to continue as a PCMH or ACO. While the practice of making sure patients have an updated medication list with them at all times is strongly supported as evidence-based practice in the literature, it has yet to become criteria for government agencies.

A final difficulty was the increase of 30-day hospital readmissions in the post-intervention phase of the project. Upon closer examination of the data, it was revealed that five hospital readmissions occurred during the post-intervention phase; however, one patient was readmitted twice. Of the five readmission encounters, none of these patients had a post-discharge follow-up appointment within the recommended 14-day period; however, all patients had medication lists and discharge summaries received by the practice. This grossly highlights the importance of following evidence-based practice that recommends these follow-up appointments

occur within 2 weeks of discharge from an acute care setting. These readmissions could have been prevented.

The main strengths of this project were its ability to make transparent the current methods in place and how they could be made better. Another significant strength is the practice's continued motivation to remain certified as a PCMH and meet all measures as an ACO. For those reasons, it is quite plausible to believe these interventions will remain in place and will be sustainable long-term.

Upon comparing the results of this quality improvement study with the literature reviewed, the findings strongly support the two outcome indicators used, one directly and the other inversely. The first outcome indicator is 30-day emergency department readmission rates. This indicator was directly supported by the literature linking the interventions (14-day post-discharge follow-up, medication list, and discharge summary review) with decreased rates of 30-day emergency room readmissions (Bonnet-Zamponi et al., 2013; Braet et al., 2016; Leppin et al., 2014). Results showed a reduction of 7% in 30-day emergency department readmission rates. The second outcome indicator that was inversely supported by the literature is 30-day hospital readmission rates. The literature supports the use of the interventions implemented in this quality improvement project in reducing 30-day hospital readmission rates. It would then inversely follow that if these interventions were not implemented, hospital 30-day readmission rates would then increase. (Braet et al., 2016; Jackson et al., 2015; Jones et al., 2016; Kangovi et al., 2014; Leppin et al., 2014). This was demonstrated in the 7% increase of 30-day hospital readmission rates in the post-intervention period. Of the five patient encounters, zero had a post-discharge follow-up appointment within the recommended 14-day period. Interestingly enough, all five encounters did show the practice had received each patient's medication list as well as the

discharge summary from the respective hospital. This emphasizes the need for standardization of all interventions.

To compare and contrast these results with findings from other studies, Thompson (2016) examined the transition of care process from a different angle. She studied whether or not the use of bundled interventions during transitions of care from hospital to community care provider would decrease 30-day readmissions. She found a significant correlation with patients who received bundled interventions and not being readmitted to the hospital within 30 days of discharge (Thompson, 2016). Bundled interventions included a follow-up appointment scheduled with the patient's PCP prior to discharge, a follow-up phone call from a licensed vocational nurse within 48 to 72 hours, and a discharge summary sent to the PCP within 1 week of discharge. However, there was no significant data found that these bundled interventions decreased 30-day readmissions to the emergency department (Thompson, 2016).

Limitations

There were multiple limitations to this quality improvement project. The first limitation was the restricted data collection. Ideally, access to every hospital and emergency department in the city of San Antonio would have been ideal to truly capture every single patient that had been seen in an acute care setting and transitioned back to this primary care practice. However, patient data was only obtainable from two hospitals. There was an attempt to collect data from a third main hospital but access was never completed. The care coordinator spent many hours attempting to speak and meet with the IT department in order to facilitate usernames and passwords for staff members to allow them to search the hospital database for patients who had been seen or admitted. This process began in early January and by the project's end on March 27, 2018, full access had yet to be granted. One option to access patients' medical records

universally would have been to participate in a local HIE. There are currently two HIEs that service the San Antonio area: Healthcare Access San Antonio (HASA) and Integrated Care Collaboration (ICC). When inquiring about the cost, the care coordinator was informed of the $5,000 per year charge the practice would need to pay in order to have access to HASA. No inquiry was made of ICC and its cost.

Another limitation was inadequate follow-up of staff for patients who had been seen in acute care settings. While improvements were made in the number of patients seen within 14 days of discharge from an acute care setting, the overall number post-intervention was low at 34%. Follow-up was also lacking in obtaining patients' medication lists (57%) and discharge summaries (63%). This may have been a direct result of the dynamic within the practice of the care coordinator being the only person responsible for completing this task instead of dividing the work amongst all staff members. Another possible explanation for this limitation could have been that there was no designated place in the EHR to store the medication lists and discharge summaries received by the hospital. During the post-intervention data collection, it was noted that these documents could live under four different tabs.

A final limitation was the time constraints with providing patients with an updated medication list at the end of their visit. This type of intervention would have "closed the loop" of communication from transition of care from the acute care setting to the primary care setting and finally to the patient (Jackson et al., 2015). However, the amount of time necessary to handwrite an updated medication list with a doctor sign off was not anticipated and inevitably not an acceptable amount of time for the patient to wait. After utilizing the PDSA model, it was agreed upon by the care coordinator and the physician to use the existing patient portal to give patients access to a copy of their updated medication list. The care coordinator agreed to oversee the

distribution of instructions for access to the patient portal to all patients during their post-discharge follow-up appointments. Due to this being an unexpected modified intervention, assessment of the efficacy of this intervention did not take place due to lack of time allocated in the project.

Recommendations

There are four recommendations based on the results of this project:

1. A list should be created of the top five hospitals frequented by the patient population. A secure method for retrieving medical records of patients that have been hospitalized or seen in the emergency department should be put into place. Perhaps contacting the admitting department, medical records, or the IT department would be a wise choice to enable access.
2. The physician should continue to use his newly designed Transition of Care form (see Appendix A). However, a strong recommendation would be to have all staff, regardless of who receives the medication list and discharge summary via fax, email, or otherwise, to save this information in the EHR under the same tab consistently. For example, the tabs titled Discharge Summary, Progress Notes, or Consults could be used. Perhaps even a new tab could be created titled Transition of Care Docs so that it can be self-explanatory for future employees.
3. High-risk patients (e.g., patients with multiple comorbidities, patients with 10 or more medications, patients with three or more high-risk medications, and patients who cannot produce a list of the medications they take) should be seen by their PCP once a month. An in-depth medication history and reconciliation process should be performed by the physician and not the medical assistant.

4. Monthly reports from random local hospitals should be produced and the practice's EHR should be compared with the hospital queries of hospitalized patients to see the percent of capture the practice currently has.

Implications for Practice

Several major implications came to light during the course of this project. The first major implication was the project's impact on care processes. The current manner in which notifications of hospitalization, medication lists, and discharge summaries are handled is inadequate. The fact that this practice only had 34% of their hospitalized patients come in for a post-discharge follow-up appointment is unacceptable. This means that 66% of their patients who had been hospitalized or seen in the emergency room ran the risk of experiencing a preventable 30-day hospital readmission. Perhaps the implementation of the Transition of Care form will help capture the 66%.

A second major implication would be to develop government policy that would create an affordable solution for all practices within the multitude of counties covered by a local HIE. In addition, creating a watchdog group to monitor the efficacy and financial viability of HIEs would allow for validation of that process. If the HIE is not a timely or feasible option, perhaps enacting legislation mandating that all hospitals mail patient medical records to their PCPs would suffice. It appears that in the past, the most efficacious precursor for change was announcing that reimbursement for hospital services would be contingent upon meeting specific criteria. For example, on October 1, 2008, it was ruled that there would be payment implications for 10 categories of conditions that would have been preventable through application of evidence-based guidelines. These were deemed "Hospital Acquired Conditions" and reimbursement was withheld for such conditions. Since then, incredible strides have been made and protocols have

been put in place across hospitals nationwide to prevent these conditions. Perhaps if 30-day hospital readmissions due to lack of PCP notification and communication were added to the 10 categories of preventable conditions, more strides would be made toward making transitions of care efficient and with a greater sense of urgency.

The doctoral-prepared nurse practitioner role is fully represented in the Doctor of Nurse Practice Essentials (American Association of Colleges of Nursing, 2006). This quality improvement project displayed a component of each and every one of the eight essentials. However, the three that were underlined the most in this project were (1) DNP Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking; (2) DNP Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care; and lastly (3) DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health.

The DNP Essential II—Organizational and Systems Leadership for Quality Improvement and Systems Thinking—speaks mostly to the intervention development aspect of this project (American Association of Colleges of Nursing, 2006). The microsystem and macrosystem assessment conducted by the DNP student allowed for both a local and global perspective of the practice organization. In the analysis of systems, inefficiencies as well as the utilization of evidence-based practice were discovered. This required research, leadership, and innovation on the part of the student.

The two DNP Essentials that supported the potential changes in patient outcomes were DNP Essential IV—Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care—and DNP Essential VII—Clinical Prevention and Population Health for Improving the Nation's Health (American Association of Colleges of

Nursing, 2006). The patient outcomes anticipated to change were a decrease in emergency department and hospital readmissions due to inadequate transitions of care. Information technology and the hospital systems in place were a massive component in this entire project. In fact, it was the inaccessibility to these technological information systems that was the biggest obstacle for decreasing 30-day hospital readmissions. This essential merges into the next one in that Essential VII speaks to clinical prevention in order to improve the nation's health. The DNP student, working with the physician of the practice, the care coordinator, and the IT person at one local hospital, attempted to simplify and create a solution to bridging the transition of care from the acute care setting back to the primary care setting. Significant improvements with regard to transitions of care were indeed made to this practice; however, to state that a standardized process was discovered is inaccurate. To be clear, perhaps it can be stated that the foundations of a standardized process were discovered. Implications for future practice could possibly include a systematic, universal, economically viable option for electronically exchanging transition of care data with the ultimate goal of improving patient outcomes.

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Appendix A: Transition of Care Form

RMC Rocha MEDICAL CLINIC

***Transition Care- Hosp Discharge-* ER- Urgent Care** Date: _____

Patient Information: Patient Name: _____

DOB: _____ Chart #: _____ Date of last visit: _____

Admission: Date admitted: _____ Date discharged:_____

Facility Name: _____ Address: _____

Treatment provided: _____

Admit Diagnosis: _____

Discharge Diagnosis: _____

Surgeries-Procedures: _____

New Treatment- Recommendations: _____

Surgeries- To Schedule Surgery: _____

Discharge Summary: ( ) received, ( ) requested, Date Requested: _____

New consultants: _____

New Diagnosis: *1)* _____ 2) _____ 3) _____ 4) _____

Notes: _____

Chronic Diagnosis: _____

Notes: _____

Treatment Changes: _____

New medications: _____

Changes in medications: _____

Tests ordered: _____

Follow up appointments: _____

New Instructions: ( ) Follow up Dr Rocha ( ) 1 wk, ( ) 2 wks, ( ) 3 wks; ( ) Called patient; ( ) Set up referral;

( ) Needs to stop medication; ( ) Needs follow up lab; ( ) Order new medications, ( ) Appointment given

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APPENDIX B: Patient Hospital Database Log Sheet

Hospital	Date of Contact	No Pts	Pt Name	Date Admitted	Date D/C'd	D/C Rec'd: Y or N	Med Rec Rec'd: Y or N	Post D/C F/U appt Date & Time

APPENDIX C: Medication List Form

					FOR	OFFICE	USE
MEDICATION/MEDICAMENTOS	**DOSE/ DOSIS**	**FREQUENCY/ FRECUENCIA**	**PRESCRIBED BY/ PRESCRITO POR: E/H/S/R**	**PRESCRIBED FOR/ RAZON**	**Rec'd**	**Approved**	**EMR updated**

KEY/LA CLAVE
D: Daily/Diariamente BID: Twice a day/Dos Veces al Dia
TID: Three times a day/Tres Veces al Dia
QID: Four times a day/Cuatro Veces al Dia
HS: At bedtime/A La Hora de Dormir PRN: As needed/Segun Sea Necesario

ALLERGIES:_____

OFFICE KEY:
E: ED MD
H: Hospital MD
S: Specialist MD
R: Dr. Rocha

I agree the medications listed above were reviewed with me/Acepto que los medicamentos enumerados anteriormente fueron revisados conmigo:

Print Name: _____ Sign:_____ Date/Fecha: _____

Approved by: _____ Date/Fecha: _____